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Overview – *The Value of Wild Atlantic Salmon*

The Background

- Atlantic salmon populations have experienced more than a 75% decline in the past few decades, from 1.8 million in 1973 to 418,000 in 2001
- Since 2001, in part through the efforts of ASF and its affiliated organizations, the population has slowly begun to recover from its 2001 low point
- DFO budgets related to Atlantic salmon have declined by nearly 75% since 1985
- In 2009 DFO spent $12 million related to Atlantic salmon. NGOs spent $15 million plus $12 million in in-kind economic contributions
- In a challenging economic climate, money talks. Because of competing demands for government resources, Fisheries and Oceans is losing track of its mandate to conserve and restore wild Atlantic salmon

Highlights

- Gardner Pinfold estimates the total annual economic value for wild Atlantic salmon in Canada at $255 million
- The $255 million represents two different measurement projects: $150 million in gross domestic product (GDP) from all related spending and $105 million in non-use value, which is proposed spending
- The top two rationales for support by the general public (non users) for spending on salmon are the importance of the species existence and the importance of natural heritage and ecosystem integrity
- The study clearly shows that there is public support for any options that move wild Atlantic salmon restoration efforts beyond the status quo.
- Making the case for future investment in salmon draws on the potential use benefits (recreational fisheries growth) and non-use benefits (public support)
- 3,872 Full-time Equivalent (FTE) jobs are directly created annually because of wild Atlantic salmon

Economic Impacts of Spending on Wild Atlantic Salmon

	Total			
Activities	**Spending***	**GDP**	**Employ-ment****	**Income**
Aboriginal and food***	$409,000	$328,000	4	$213,000
Recreational fishing****	$128,283,000	$115,263,000	3,316	$100,242,000
Federal government	$12,000,000	$10,305,000	107	$7,327, 000
Provincial government	$8,760,000	$7,414,000	122	$7,562, 000
Academic research	$765,000	$825,000	12	$615, 000
NGOs	$15,745,000	$15,376,000	311	$12,324, 000
Total	**$165,962,000**	**$149,511,000**	**3,872**	**$128,283, 000**

Source: Statistics Canada input-output analysis model.
*"Spending" is the total receipted transactions related to wild Atlantic salmon
**Employment in full-time equivalents (FTE).
*** The Aboriginal and Food fishery value was derived from ICES data and includes such things as gear, supplies and transportation. It does not capture the cultural and existence value to First Nations
**** The recreational fishing activity included regular anglers as well as a second component of high economic impact fishing camps and lodges.

Definitions

- ***GDP:*** *The gross domestic product is the market value of all final goods and services*
- ***Income:*** *payments in the form of wages and salaries earned.*

The Surveys

- The study involved two surveys. The survey of direct users (anglers) had a sample size of 1,324. A stratified random sample was chosen that was consistent with the system used by DFO for its recreational angler survey.
- The sample size was greater than DFO's random sample of 1,113 direct users (anglers) in the department's 2005 recreational angling survey
- The survey of the general public (non-users) had a sample size of 995. This general public sample included residents of Atlantic Canada and Quebec

Economic Value of Wild Salmon to Canadian Public Who are Non-users

- More than 80% of the public supports investment in salmon restoration with a "willingness to pay" in the range of $4.50 to $12.50 per tax-paying household
- There is strong public support for tax increases (conditional on performance) to fund wild Atlantic salmon stock recovery.
- The support is conditional on demonstrating progess and is based on economic, intrinsic and ecological values.

Four Case Study Rivers

- Demonstrate that generating sustainable economic activity is highly valuable, especially to rural economies.

River	Prov.	Annual Spending	GDP	FTE Jobs	Income	Comments
Exploits	NL	$3.5M	$3.0M	73	$2.2M	Most successful enhancement in North America. Salmon return has increased from 1,500 in 1970s to 40,000 today
Margaree	NS	$2.9M	$2.5M	70	$2.1M	2/3 of anglers are international, injecting money into rural economy
Miramichi	NB	$20M	$16M	637	$19.1M	Largest salmon runs in the world attracting visitors from around the world
Grand Cascapedia	QC	$6.2M	$7.2M	172	$5.2M	Strong conservation effort is building up this river known for its very large salmon

The Case for Investing in Wild Atlantic salmon - the Government Framework

- The basis for investing in wild Atlantic salmon begins with policy set by DFO as the lead federal agency
- *Policy for Conservation of Wild Atlantic Salmon* - The goal: "to maintain and restore healthy and diverse salmon populations and their habitat, for the benefit and employment of the people of Canada in perpetuity" (DFO, 2009). The policy is largely unfunded at present.
- *SARA Recovery Strategy and Action Plans* - Specific, but presently limited and largely undeveloped
- *Conservation Status Report for Atlantic Salmon in Atlantic Canada and Québec* - Eventually will be comprehensive and specific, but not yet developed
- Specific programs have shown how investment can restore these populations, even when working with rivers when salmon populations are endangered. For example:
    - West River, Sheet Harbour, NS - This acid rain impacted river had critically low numbers of Atlantic salmon before a lime doser was installed, paid for by NGOs, in 2005. Since then, parr salmon numbers have increased 400%, and young juvenile salmon are in some parts of the river at levels not seen since 1971.

Investing in Wild Atlantic Salmon - the Business Case

- An increase in salmon numbers is an important goal of both the public and the recreational fishing segment
- A return to former higher angler numbers is viewed as a key driver for growth in spending. The more fish there are; the more anglers there are
- For example, more anglers participated in the recreational fishery in 2010 (53,883) due to better runs, compared to 2005 (41,737)
- Atlantic salmon restoration is a core responsibility of DFO. This study supports at the very least DFO spending an additional $15M annually, amounting to a total of $27M annually on wild Atlantic salmon. This would provide a significant return on investment.
- Even spending $27 million is far below the proposed spending based on the perceived value of wild Atlantic salmon ($105 million) by the Canadian public

Next Steps:

- Based on the high economic value of restored populations, government should build and fund a comprehensive wild Atlantic salmon restoration program. The policy and treaty obligations of Government have made wild Atlantic salmon a core mandate
- Government should partner with NGOs who are often experts in restoration work and are already spending more than government on restoring wild Atlantic salmon
- Ensure that the program has a high likelihood of success that can be measured in increased Atlantic salmon populations
- Communicate about wild Atlantic salmon challenges to the public to gain their support. This is important even if this concedes past management shortcomings
- Be clear and specific about the goals of wild salmon restoration programs, including where activities will take place, who will benefit and in what ways.
- Communicate the likelihood of success for program investments clearly to the public
- A phased approach may be helpful to achieve and demonstrate early success. This will build support for steps that restore salmon stocks to their historic highs

East Machias Parr Density Based on Electrofishing Surveys Survey Year, 2014

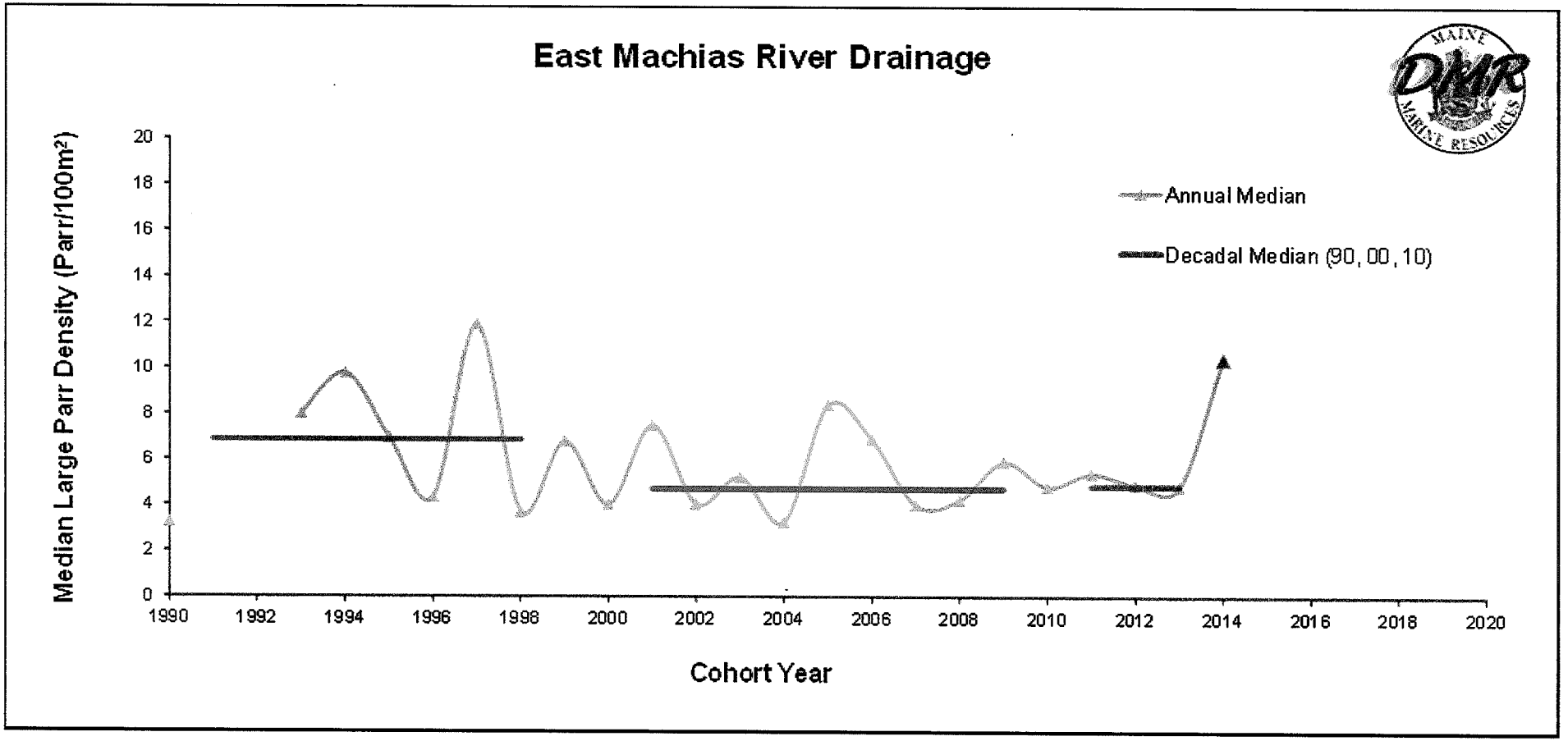
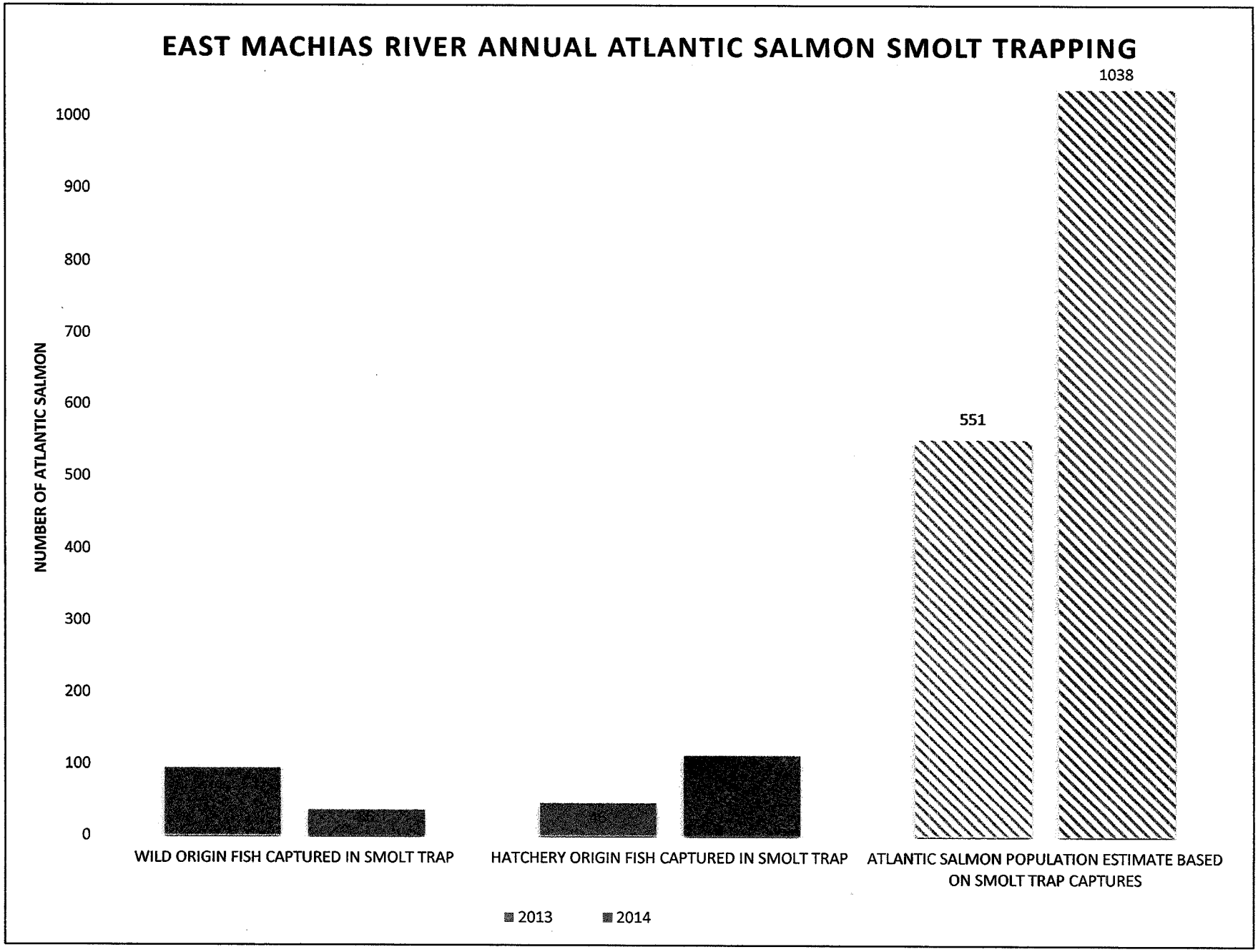


Figure 1. Juvenile Atlantic salmon median density (large parr/100m^2) observed during annual backpack electrofishing surveys, East Machias River drainage, Washington County, Maine (1990-2014)


EAST MACHIAS RIVER ANNUAL ATLANTIC SALMON SMOLT TRAPPING
NUMBER OF ATLANTIC SALMON
1000
900
800
700
600
500
400
300
200
100
0
1038
551
WILD ORIGIN FISH CAPTURED IN SMOLT TRAP
HATCHERY ORIGIN FISH CAPTURED IN SMOLT TRAP
ATLANTIC SALMON POPULATION ESTIMATE BASED ON SMOLT TRAP CAPTURES
2013
2014

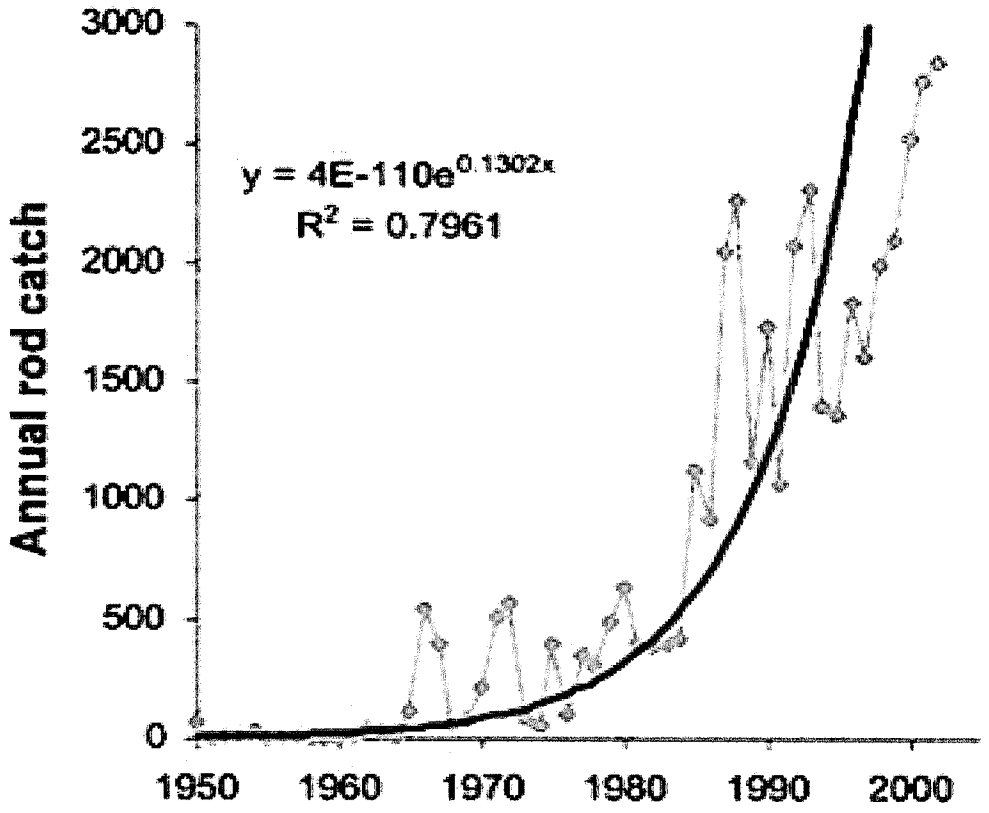


Fig 20 Exponential fit of adjusted Tyne rod catch data

DOWNEAST SALMON FEDERATION

15th Annual Smelt Fry & Fisheries Celebration

Saturday, April 18th 1-6 p.m. in Columbia Falls

A lil' something different this year! It's going to be a full day affair and celebration! The meal and raffles will be held throughout the day at the Wreaths Across America hall in Columbia Falls (formerly the elementary school) We'll be serving fried smelts, coleslaw, rolls, organic blueberry cobbler and a drink for $5 per plate!

There is no reason to rush, there will be plenty of smelts to last the day! We hope you will enjoy the new event changes and we're sure you will be happy about one thing; no more long lines! Please feel free to contact us at 483-4336 with any questions!

Tour the Wild Salmon Resource Center and the Pleasant River Hatchery, stroll along the Pleasant River and stop by our Heritage Fish Camp for a bowl of venison/moose stew. Visit Union Hall for fisheries displays and information and to view the 2015 Student Art Contest winners with awards at 4 p.m. !